

Contributions to the knowledge of Dolichopodid flies in Belgium : II. Faunistic data on the Dolichopodid fauna of some nature reserves in the Campines (Prov. Limburg, Antwerpen, Belgium) (Diptera : Dolichopodidae)

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Samenvatting. Bijdrage tot de kennis van de Dolichopodidae in België : II. Faunistische gegevens van Dolichopodidae uit enkele natuurreservaten in de Kempen (prov. Limburg, Antwerpen, België) (Diptera : Dolichopodidae)

Tijdens een kort onderzoek werden in verschillende natuurreservaten in de Kempen (Prov. Antwerpen en Limburg, België) langpootvliegen (Dolichopodidae) gevangen met behulp van een sleepnet. In totaal werden 1327 exemplaren verzameld, behorend tot 53 soorten. De volgende soorten blijken faunistisch interessant te zijn : *Achalcus cinereus* HALIDAY, *Campsicnemus alpinus* HALIDAY, *Campsicnemus compeditus* LOEW, *Dolichopus rupestris* HALIDAY, *Hercostomus angustifrons* STAEGER, *Hydrophorus albiceps* FREY en *Hydrophorus nebulosus* FALLEN.

Résumé. Contribution à la connaissance des Dolichopodidae en Belgique : II. Données faunistiques des Dolichopodidae de quelques réserves naturelles en Campine (Prov. de Limbourg et d'Anvers, Belgique) (Diptera : Dolichopodidae)

Au cours de brèves investigations dans différentes réserves naturelles de Campine (prov. Anvers et Limbourg) l'auteur a récolté des Dolichopodidae par fauchage. Au total, 1327 exemplaires furent répertoriés, répartis en 53 espèces. Les espèces suivantes sont spécialement intéressantes au point de vue faunistique : *Achalcus cinereus* HALIDAY, *Campsicnemus alpinus* HALIDAY, *Campsicnemus compeditus* LOEW, *Dolichopus rupestris* HALIDAY, *Hercostomus angustifrons* STAEGER, *Hydrophorus albiceps* FREY et *Hydrophorus nebulosus* FALLEN.

Abstract. Contributions to the knowledge of Dolichopodid flies in Belgium : II. Faunistic data on the Dolichopodid fauna of some nature reserves in the Campines (Prov. Limburg, Antwerpen, Belgium) (Diptera : Dolichopodidae)

During a short-term survey, several nature reserves in the Campines (Prov. Antwerpen and Limburg) were sampled for dolichopodid flies (Dolichopodidae), mainly by means of net sweeping. A total of 1327 flies were collected, belonging to 53 species. Several species of special faunistic interest were found : *Achalcus cinereus* HALIDAY, *Campsicnemus alpinus* HALIDAY, *Campsicnemus compeditus* LOEW, *Dolichopus rupestris* HALIDAY, *Hercostomus angustifrons* STAEGER, *Hydrophorus albiceps* FREY and *Hydrophorus nebulosus* FALLEN.

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Introduction

Despite the presence of many interesting areas, in particular heathland and fenland, the dipteran fauna of the Campines has only rarely been studied. In contrast to relatively well investigated groups such as the hoverflies (Syrphidae) (VERLINDEN & DECLEER 1987), only very few data are found in the literature on the distribution of long-legged flies (Dolichopodidae, Diptera) in this part of the country (MEUNIER 1905, 1908, 1911).

A first contribution (POLLET & DE BRUYN 1987) dealt with the dolichopodid fauna of a garden habitat at Schoten (Prov. Antwerpen),

collected by a Malaise trap. In this paper, data on the dolichopodid flies of several nature reserves in the provinces of Antwerpen and Limburg (Belgium) are presented and briefly discussed.

Study area, material and methods

Figure 1 shows the location of the sampled nature reserves in Belgium and Table 1 summarizes the different nature reserves with an indication of the locality, UTM 10 km-square, province, the sampling date and a short characterization of the investigated habitats. Apart from the data from Dilsen, which were collected by means of pitfall traps, all flies were gathered by net sweeping. After sweeping, all material was put in a collecting jar and sorted out in the laboratory afterwards. Dolichopodid flies were identified by means of D'ASSIS FONSECA (1978), PARENT (1938) and some unpublished keys by Drs H.J.G. MEUFFELS. Nomenclature is according to MEUFFELS & GROOTAERT (1987).

Results and discussion

Table 2 presents all data on the dolichopodid flies per habitat type.

A total of 1327 flies were collected, belonging to 53 species. Although data from unstandardized sampling methods should not be compared, some general conclusions can be drawn concerning the habitat preference of some species, when considering only the data from the four latter areas (cfr. Table 1).

Hercostomus aerosus, the most abundant species in our samples, was caught in highest numbers in the humid woodland site of the «Vallei van de Zijpbeek». Although *H. brevicornis* was always found together with the former species, it was collected in larger numbers than *H. aerosus* in the coniferous stand. EMEIS (1964) reports both species from deciduous and coniferous woodland.

Dolichopus simplex was gathered in great numbers only at small pools along a path within an *Erica* heathland. In contrast to our findings, EMEIS (1964) calls this species very eurytopic as it was found in various habitat types. *Campsicnemus pectinulatus* appeared to be by far the dominant species at bare, muddy patches in a grassland habitat. According to VANDER VELDE et al. (1985), this is one of the characteristic species of nymphaeid-dominated fresh water ecosystems in The Netherlands.

Many species which can be termed very common in Belgium, such as *Campsicnemus curvipes*, *Dolichopus plumipes*, *D. unguilatus* and *Sympycnus pulicarius*, were infrequently encountered during our investigations. This is due to the fact that mainly oligotrophic habitats were sampled, which are not favoured by these species. Furthermore, it is striking that the three *Chrysotus* species (*C. cilipes*, *C. gramineus*, *C. neglectus*) were found together in nearly all situations.

Besides most of the collected species, which are rather common, some species of special faunistic interest were also noted :

Achalcus cinereus was first mentioned for Belgium (Liège, 28.I.1952) by COLLART (1953). The species is also known from other localities but does not seem to prefer a particular habitat type. PARENT (1938) mentioned humid forests as its habitat, whereas LUNDBECK (1912) postulated that *A. cinereus* mainly occurs at the borders of water among reeds. D'ASSIS FONSECA (1978), EMEIS (1964) and LUNDBECK (1912) consider the species as rare. Its geographical distribution area extends from northern and central Europe down into Austria and Bohemia and towards the north to southern Sweden.

Campsicnemus alpinus was found at the borders of pools within *Erica* heathland only. In the literature, only NELSON (1971) mentions this species from *Calluna* heath. Since in the province of Western Flanders, *C. alpinus* was discovered in *Erica* heathland only (unpubl. data), this is most probably its usual habitat. The species is considered rare everywhere (LUNDBECK 1912), which might be due to its obscure way of life within *Erica* or *Calluna* vegetation. Like most species of the genus *Campsicnemus* (cf. POLLET & GROOTAERT 1987), *C. alpinus* demonstrates a pronounced soil surface activity. It is known from Belgium, The Netherlands, Great Britain, Schleswig-Holstein, Mecklenburg, Austria, Denmark, Sweden and Russia.

Campsicnemus compeditus was recorded by POLLET & GROOTAERT (1986) as a new species to the Belgian fauna. This record was based on the capture of a single female in the nature reserve «De Slangebeekbronnen» at Zonhoven. On 16.VIII.1987, 3 males and 7 females were collected in a peatbog in the nature reserve «De Teut» at the same locality. There is hardly any information about this species in the literature. D'ASSIS FONSECA (1978) considered this species as rare in Great Britain. According to PARENT (1938), it is distributed in northern and central Europe : France, Burgenland, Mecklenburg, Lapland, Scandinavia and Russia.

Dolichopus rupestris is a mountain and northern species (D'ASSIS FONSECA 1978; MEUFFELS 1974). It was first recorded for The Netherlands by MEUFFELS (1974). Its distribution area extends from northern and central Europe down into France, where it reaches its southern limit. *D. rupestris* has also been found in Siberia and North America including Alaska (LUNDBECK 1912; MEUFFELS 1974; PARENT 1938; STACKELBERG 1933).

Hercostomus angustifrons is called rare by several authors (D'ASSIS FONSECA 1978; LUNDBECK 1912; VERBEKE 1985). So far, it has been recorded from only four localities in our country : Franc Bois (Willerzie, Luxemburg), Lippensgoed-Bulskampveld (Beernem, West-Vlaanderen) (VERBEKE 1985), Wijnendalebos (Torhout-Ichtegem, West-Vlaanderen) (POLLET et al. 1986) and Mol (Antwerpen) (GROOTAERT et al. 1986). According to LUNDBECK (1912), it is mainly found in humid places, especially beside water on aquatic places. To date, in our country *H. angustifrons* has mostly been collected near oligotrophic fens neighbouring woodland areas. It is known from central and northern Europe from Bohemia and Hungary (WEBER 1985) towards the north to central Sweden and Finland.

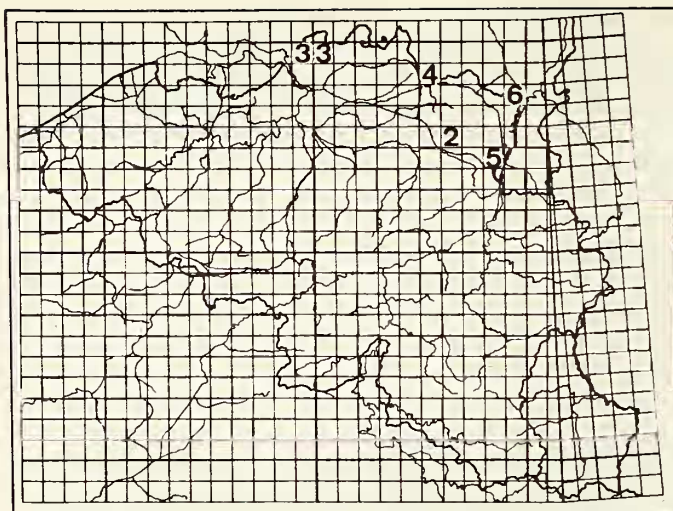


Figure 1 : Locations of the sampled nature reserves in Belgium :

- | | |
|---|---|
| 1. «Grote Homo» (Dilsen) | 4. «Ronde Put» (Postel) |
| 2. «Laambroeken», «De Teut», «Slangbeek-bronnen» (Zonhoven) | 5. «Vallei van de Asbeek», «Vallei van de Zijpbeek» (Rekem) |
| 3. «Kalmthoutse Heide» (Kalmthout) | 6. «Stamprooiersbroek» (Kinrooi) |

Hydrophorus albiceps is an uncommon northern species in Great Britain (D'ASSIS FONSECA 1978). Also in The Netherlands the species is rare as it was recorded for the first time as recently as in 1978 by MEUFFELS (1978). Both PARENT (1938) and MEUFFELS (1978) claimed that *H. albiceps* reaches the limits of its distribution area in Belgium and most probably does not occur in the southern part of our country. It seems to be widely distributed in northern Europe and has also been discovered in Great Britain (D'ASSIS FONSECA 1978), western Siberia, Baikal and Mongolia (NEGROBOV 1977).

Hydrophorus nebulosus appears to be a species typical for peatmoors (NELSON 1971; PARENT 1938). It is fairly common in Great Britain (D'ASSIS FONSECA 1978), but is considered uncommon in Denmark, where it occurs both at fresh water and on the sea-shore (LUNDBECK 1912). Its distribution area comprises northern and central Europe from France up to northern Scandinavia and Finland (LUNDBECK 1912).

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Table 1. Summary of the investigated nature reserves; column A: name, B: location, C: U.T.M. 10 km-square, D: province (A: Antwerpen, L: Limburg), E: sampling date, F: short characterization of the habitats.

A	B	C	D	E	F
I. "Grote Homo"	Dilsen	FS95	L	17.VII.1984	shrubby site near oligotrophic pond
II. "Laambroeken"	Zonhoven	FS65	L	18.V.1985	meadow; borders of rivulet
III. "Kalmthoutse heide"	Kalmthout	ES99/FS09	A	12.V.1986 5.VI.1987	borders of fens <u>Erica</u> heathland; shrubby border of path
IV. "Ronde Put"	Postel	FS58	A	4.VI.1985 9.VI.1987	peatbog peatbog
V. "Vallei v/d Asbeek"	Rekem	FS84	L	15.VIII.1987	borders of fens
VI. "Vallei v/d Zijpbeek"	Rekem	FS84	L	15.VIII.1987	a. dry coniferous woodland b. humid woodland (deciduous and coniferous) c. borders of pools along path within <u>Erica</u> heathland d. <u>Erica</u> heathland
VII. "De Teut"	Zonhoven	FS65	L	16.VIII.1987	a. peatbog b. deciduous woodland
VIII. "Slangebeekbronnen"	Zonhoven	FS65	L	16.VIII.1987	peatbog
IX. "Stampoelersbroek"	Kinrooi	FS97	A	16.VIII.1987	a. peatbog b. meadow with sodded patches

Table 2. Summary of the dolichopodid species with the numbers found per sampled habitat (males/females); the habitats are listed according to Table 1.

Investigated habitats	I	II	III	IV	V	VIa	VIb	VIc	VId	VIa	VIIb	VIII	IXa	IXb	Total
<i>Achalcus cinereus</i> (HALIDAY, 1851)	-	-	-	-	-	-	-	-	-	-	-	-	-	2/1	2/1
<i>Argyra diaphana</i> (FABRICIUS, 1775)	-	3/2	-	-	-	-	-	-	-	-	-	-	-	-	3/2
<i>Campsicnemus alpinus</i> (HALIDAY, 1873)	-	-	-	-	-	-	-	2/	-	-	-	-	-	-	2/
<i>Campsicnemus compeditus</i> LOEW, 1857	-	-	-	-	-	-	-	-	-	3/7	-	/1	-	-	3/8
<i>Campsicnemus curvipes</i> (FALLEN, 1823)	-	-	-	-	-	-	-	-	-	-	-	-	-	/1	/1
<i>Campsicnemus loripes</i> (HALIDAY, 1862)	-	-	-	-	-	-	4/5	-	-	-	-	-	-	-	4/5
<i>Campsicnemus pectinulatus</i> LOEW, 1864	-	-	-	-	-	-	-	/1	-	-	-	-	-	89/112	89/113
<i>Campsicnemus picticornis</i> (ZETTERSTEDT, 1843)	-	-	-	-	-	-	-	-	-	-	-	-	-	1/4	1/4
<i>Campsicnemus scabrus</i> (FALLEN, 1823)	-	-	-	/1	-	-	2/	13/3	1/1	-	/1	1/1	3/4	4/17	24/28
<i>Chrysotimus mollisculus</i> (FALLEN, 1823)	-	-	-	-	-	/1	-	-	-	1/2	-	/4	-	-	1/7
<i>Chrysotus ciliipes</i> MEIGEN, 1824	-	-	-	-	-	5/19	/5	2/5	-	-	/1	/3	-	-	7/33
<i>Chrysotus gramineus</i> (FALLEN, 1823)	-	-	-	-	/2	1/9	/1	2/2	-	1/5	/6	/11	-	/11	4/47
<i>Chrysotus neglectus</i> (WIEDEMANN, 1817)	-	-	-	-	-	1/6	/5	/3	-	/1	/4	/2	-	-	1/21
<i>Diaphorus nigricans</i> MEIGEN, 1824	-	-	-	-	-	/1	/1	/4	-	-	-	-	-	-	/6
<i>Dolichopus atratus</i> MEIGEN, 1824	-	-	-	/1	-	-	-	-	-	-	-	-	-	-	/1
<i>Dolichopus atripes</i> MEIGEN, 1824	-	-	-	-	-	-	-	-	-	-	-	/3	-	/1	/4
<i>Dolichopus discifer</i> STANNIUS, 1831	-	-	1/	-	-	-	2/2	/1	2/	-	-	-	-	-	5/3

Table 2a.

Dolichopus longicornis STANNIUS, 1831	-	-	-	1/	-	-	-	-	-	-	-	-	-	1/
Dolichopus lepidus STAEGER, 1842	-	2/	-	1/2	-	-	-	1/1	-	-	-	1/1	/2	5/6
Dolichopus nitidus FALLEN, 1823	-	-	-	-	-	-	-	-	-	-	-	-	/1	/1
Dolichopus pennatus MEIGEN, 1824	-	3/1	-	-	-	-	-	-	-	-	-	-	-	3/1
Dolichopus picipes MEIGEN, 1824	-	1/	-	-	-	-	-	-	-	-	-	-	-	1/
Dolichopus plumipes (SCOPOLI, 1763)	-	-	-	2/	-	-	1/1	-	-	-	-	-	-	3/1
Dolichopus popularis WIEDEMANN, 1817	/1	-	-	-	-	-	-	-	-	-	-	-	-	/1
Dolichopus rupestris HALIDAY, 1833	-	-	-	-	-	2/4	-	/1	-	-	-	-	-	2/5
Dolichopus simplex MEIGEN, 1824	-	-	-	-	-	2/	54/62	1/1	-	-	-	-	/2	59/65
Dolichopus signatus MEIGEN, 1824	-	-	2/1	-	-	-	-	-	-	-	-	-	1/	3/1
Dolichopus tanythrix LOEW, 1869	-	-	-	14/11	-	-	-	/1	-	2/12	-	1/5	-	17/29
Dolichopus unguilatus (LINNAEUS, 1758)	-	-	-	2/1	-	-	1/1	2/2	-	-	-	-	-	5/3
Dolichopus vitripennis MEIGEN, 1824	-	-	-	-	-	-	1/1	3/9	1/1	10/14	-	-	-	15/25
Hercostomus aereus (FALLEN, 1823)	-	-	5/	-	1/1	3/5	81/76	51/49	14/29	5/11	25/4	1/1	2/1	7/14 195/191
Hercostomus angustifrons (STAEGER, 1842)	-	-	-	2/	-	-	3/3	3/	1/1	-	-	-	-	/1 9/5
Hercostomus brevicornis (STAEGER, 1842)	-	-	-	-	/1	9/17	25/30	22/26	-	-	-	-	-	56/74
Hercostomus celer (MEIGEN, 1824)	/2	-	-	-	-	-	-	-	-	-	-	-	-	1/ 1/2
Hercostomus cupreus (FALLEN, 1823)	-	/1	7/4	7/6	-	-	-	-	-	-	-	/1	-	14/12
Hydrophorus albiceps FREY, 1915	-	-	7/13	-	-	-	-	-	-	-	-	-	-	7/13

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